云南蝠蛾属 *Hepialus* 四新种*

（鳞翅目：蝙蝠蛾科）

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关键词：云南，蝠蛾属，德钦，白马雪山，梅里雪山，玉龙雪山，甲午雪山，新种。

蝠蛾属蛾类幼虫是虫草菌的寄主，属鳞翅目蝙蝠蛾科。据朱弘复、王林瑶（1985）报道我国已知种类有13种，上田恭一郎（K. Ueda 1980、1981）报道日本有4种。近年我们在整理所采蝠蛾属标本中，经仔细的比较研究，有4种显然不同于已知的种类，故认为是新种，所有模式标本均保存于中国科学院昆明动物研究所。

1.德钦蝠蛾 *Hepialus deqinensis* Liang新种（图1—3）

雄蛾：体长13mm，翅展30mm。

雌蛾：体长17mm，翅展38mm。

复眼黑色，触角丝状，触角各节具细毛，喙短小不易见，下唇须短，周围多毛；前足胫节具胫距，各足的爪都很弯曲，前翅Cup脉有横脉分别和CuA_2及A脉连接，后翅Cup脉短。雌性外生殖器第九腹板中叶突出但端部平钝，两侧收缩并密被细毛。雄性外生殖器背兜下部较宽并骨化呈黑色，抱器瓣下端有一钩，囊形突上部弧形突出，下部有微凹陷。

与本属模式种虫草蝠蛾 *H. armoricanus* 的主要区别是：前后翅的R脉和M脉之间无横脉相连，雄性外生殖器的背兜、抱器瓣和抱器瓣钩不同。

正模♂，配模♀，副模1♀，云南德钦甲午雪山，1986 Ⅶ 2，斯那都吉采。

2.白马蝠蛾 *Hepialus baimaensis* Liang新种（图4—6）

雄蛾：体长13—19mm，翅展33—40mm。

雌蛾：体长20mm，翅展40mm。

复眼黑色，触角丝状，各节具细毛，喙很短，下唇须亦短，周围被有许多毛；前翅

* 蒙朱弘复、王林瑶先生审定文稿，德钦县科委存生、斯那都吉、鲁白、喻润清等同志参加了野外工作，在此一并致谢。
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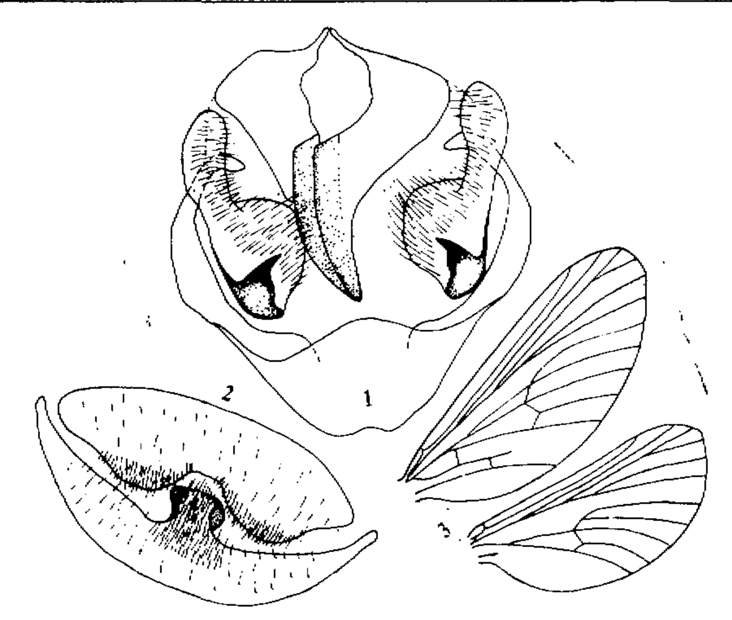


图1—3 德钦蝠蛾 新种 *Hepialus deqinensis* sp. nov.

1. 雄性外生殖器后面观 Male genitalia. Caudal aspect.
2. 雌性外生殖器后面观 Female genitalia. Caudal aspect.
3. 翅脉 Wing vein.

后横带有黑褐色斑5个，亚外缘带有黑褐斑6个，中间3个斑半月形，后翅灰黑色无斑，前翅Cup脉短，近端部处有一横脉和A脉相连，前翅Cup脉和A脉都长，直伸到翅缘，前足有胫距，各足爪弯曲，有中垫，雌性外生殖器第九腹板中叶明显突起呈三角形，中叶和其周围部分密被毛，形成明显的被毛区，第九腹板中间凹处有小突，背板下部密被毛，雄性外生殖器抱器瓣钩有一齿，抱器瓣上着生许多细毛，背兜较小，无钩，下部有一对骨化成暗色的三角形区，囊形突上部边缘都呈弧形突出。

与德钦蝠蛾 *H. deqinensis* 的区别在于前翅Cup上方无横脉，后翅Cup脉伸达翅缘，雌性外生殖器交尾口下部凸起不同，雄性外生殖器的背兜端部、抱器瓣和抱器瓣钩不同。

正模♂，配模♀，副模4♂♂，2♀♀，云南德钦白马雪山，1985 Ⅵ 17—Ⅶ27，昆明动物研究所和德钦县虫草协作组采。

3.梅里蝠蛾 *Hepialus meiliensis* Liang新种（图7—9）

雄蛾：体长13mm，翅展30mm。

雌蛾：体长18mm，翅展35mm。

复眼黑褐色，触角丝状具细毛，其长度短于触角节的宽；前翅A脉长，伸到翅缘，Cup脉很短，端部有横脉和A脉相连，各足趾钩弯，中间爪垫边缘一圈是黑色；雌性外生殖器第九腹板中叶突起圆弧形，其两边有膜状物，中叶和邻近部分密被毛，第九背板

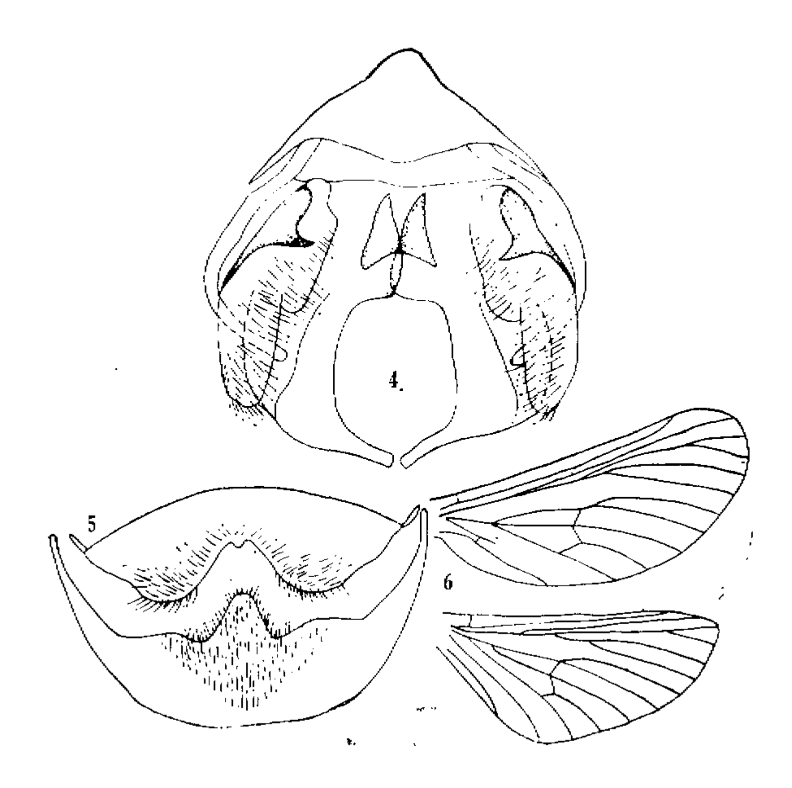


图4—6　白马蝠蛾　新种　*Hepialus baimaensis*. sp.

4、雄性外生殖器后面观　Male genitalia. Caudal aspect.

5、雌性外生殖器后面观　Female genitalia. Caudal aspect.

6、翅脉　Wing vein.

两边突出部分色较深，密被毛；雄性外生殖器背兜无钩，下部中间边缘有明显的黑色骨化区，抱器瓣钩一齿，抱器瓣具毛，囊形突上下圆弧形突起。

与白马蝠蛾*H.baimaensis*的区别是：本种Cup脉上方有横脉和CuA_2脉相连，雌性外生殖器中叶附近有膜，雄性外生殖器抱器瓣粗短。与德钦蝠蛾*H. deqinensis*的区别是：后翅Cup脉伸达翅外缘，雄性外生殖器抱器瓣基部不如德钦蝠蛾粗大。

正模♂，配模♀，副模1♀，云南德钦梅里雪山，1985 Ⅶ 29，杨大荣、春生采。

4.玉龙蝠蛾*Hepialus yulongensis* Liang新种（图10—12）

雄蛾：体长14mm，翅展30mm。

雌蛾：体长14mm，翅展34mm。

复眼黑色，触角丝状，其上具细毛，喙很短，下唇须亦很短，周围密被毛；前翅Cup脉很短，与A脉在近端部处有一横脉相连，后翅Cup脉发达，A脉短小，各足的爪较



图7—9　梅里蝠蛾　新种 *Hepialus meiliensis* sp.

7．雄性外生殖器后面观　Male genitalia. Caudal aspect.

8．雌性外生殖器后面观　Female genitalia Caudal aspect.

9．翅脉　Wing vein.

大，弯曲，爪中垫相对较小，前足胫节有胫距；雌性外生殖器第九腹板中叶端部宽大，中间微凹，第九背板下部边缘密生毛：雄性外生殖器背兜中部、近端部各有一对钩，端部合拢，抱器瓣长形，无钩、具毛，囊形突上下边平钝。

与云龙蝠蛾*H*．*yunlongensis*的区别是：前后翅的R_5脉和M_1脉之间无横脉相连，前翅Cup脉和A脉之间有横脉相连，雄性外生殖器背兜和抱器瓣不同。与丽江蝠蛾*H*．*lijiangensis*的区别是：前后翅的R_5脉与M_1脉之间无横脉相连，背兜端部仅一岔，抱器瓣和囊形突的形状亦不同。

正模♂，配模♀，副模6♂♂，7♀♀，云南丽江玉龙雪山，1986 Ⅵ 1～6，杨大荣、杨跃雄、鲁自等采。

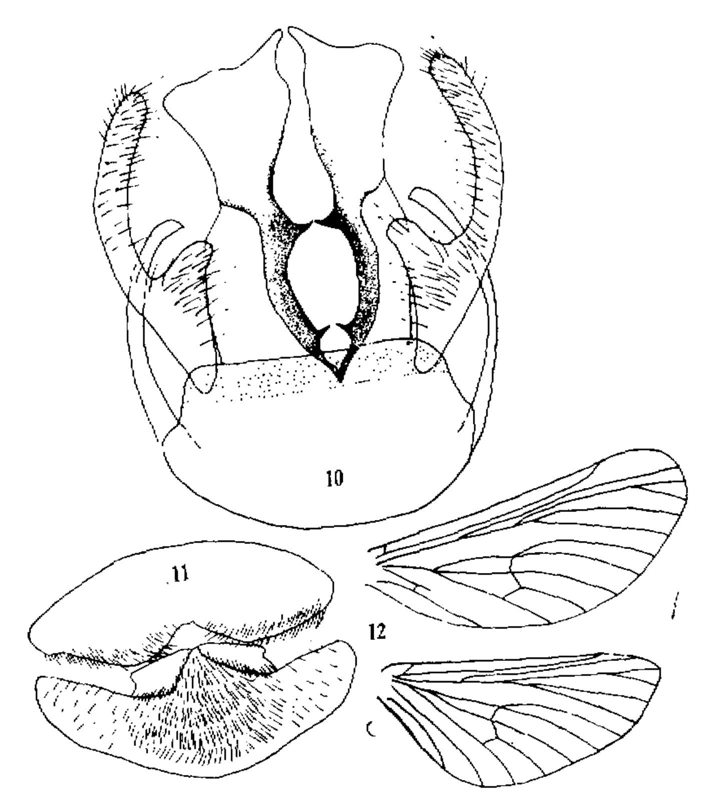


图10—12　玉龙蝠蛾　新种*Hepialus yulongensis* sp.

10．雄性外生殖器后面观 Male genitalia. Caudal aspect.

11．雌性外生殖器后面观 Female genitalia.

12．翅脉 Wing vein.

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FOUR NEW SPECIES OF THE GENUS *HEPIALUS* (GHOST MOTH) FROM YUNNAN, CHINA

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In the present paper, four species of the genus *Hepialus* are described as new. All the type specimens were collected in the snow mountains and deposited in Kunming Institute of Zoology, Academia Sinica.

1. *Hepialus deqinensis* Liang sp. (Fig.1—3)

Body length: ♂ 13mm, ♀ 17mm.

Compound eye dark, antennae filiform and with some setae on it, labial palps present, there are spurs on fore tibia, two cross vein present above and below Cup of forewing; Female genetalia as shown in Fig 2, in the male genitalia, valve with one tooth at the base part, tegumen strongly sclerotized at the middle and terminal part, posterior margin of saccus concaved at the middle part.

It differs from *H. armoricanus* : without cross vein between the veins of R_5 and M_1 and the male genitalia (Fig.1).

Holotype ♂, allotype ♀ and paratype 1♀, Yunnan : Deqin county, Jiawu snow mountain, 2 August, 1986.

2. *Hepialus baimaensis* Liang sp. (Fig.4—6)

Body length: ♂ 13—19 mm, ♀ 20 mm.

Compound eye dark, antennae filiform, labial palps present, Cup of forewing short and with one cross vein below it, fore tibia with spur; in female genitalia, the middle lobe of 9th sternum projecting and with a triangle shape, in male genitalia, valve covered by hairs and with one tooth in the base part, tegumen with one pair weakly sclerotized triangular area, saccus projecting on above and below margin.

Distinguished from *H. deqinensis* by cup of forewing without crossvein above it, cup of postwing reach the termen and the male and female genitalias as Fig. 4—5,

Holotype ♂, allatypes ♀, paratypes 4♂♂, 2♀♀, Yunnan: Deqin county, Baima (White-horse) snow mountain, 17 June-- 27 July, 1985.

3. *Hepialus meiliensis* Liang sp. (Fig. 7--9)

Body length: ♂ 13 mm, ♀ 18 mm.

Compound eye dark brown, antennae filiform and with sparse hairs, labial palps present; cup of forewing short and with 1 cross vein below it; in the female genitalia, there are a projection in the middle part of 9th sternum and with membrane around it, in the male genitalia, valve short and with one tooth at the base part, tegumen with one strongly sclerotized area in the middle and terminale area, saccus projecting on the above and below margin.

The differences from *H. baimaensis* are cup of forewing with a cross vein above it, middle lobe of female genitalia with membrane and male genitalia with wide and short valve.

Holotype ♂, allatype ♀, paratype 1♀, Yunnan: Deqin county, Meili snow mountain, 29 July, 1985.

4. *Hepialus yulongensis* Liang sp. (Fig. 10—12)

Body length: ♂ 14 mm, ♀ 14 mm.

Compound eye dark, antennae filiform and with sparse hairs, labial palps present; cup of forewing short and with 1 cross vein below it, foretibia with spurs; the middle lobe of female 9th sternum broad in its topic part and with some membrane around it, in male genitalia, valve thiner and don't have tooth, tegumen have two teeth in each side, one tooth in the middle place and another is near to the terminal area, saccus plane on above and below margin.

Distnguish from *H. yunlongensis* are no cross vein between R_5 and M_1 of fore and post wing, cup of fore wing with a cross vein at below side and male genitalia as Fig.10. It different from *H. lijiangensis* are without cross vein between R_5 and M_1 and male genitalia as Fig. 10.

Holotype ♂, allotype ♀, paratype 6♂♂, 7♀♀, Yunnan: Lijiang, county, Yulong snow mountain, 1—6, 1986.

Key wards: Yunnan, *Hepialus*, Deqin, Baima Snow Mountaim, Meili Snow Mountain, Jiawu Snow Mountain, Yulong Snow Mountain, New species.